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THAI AGRICULTURAL STANDARD

TAS 7023-2018

PLA-RA

National Bureau of Agricultural Commodity and Food Standards
Ministry of Agriculture and Cooperatives

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Pla-ra is a popular traditional fermented fish consumed in all regions of Thailand. Export of Pla-ra and its products is continuously expanding. The Agricultural Standards Committee, therefore, deems it necessary to establish Thai Agricultural Standard for Pla-ra so as to promote the quality and safety of Thai Pla-ra as well as to gain domestic and international recognition.

This standard is based on the following document:

National Bureau of Agricultural Commodity and Food Standards. 2016. Report on Survey of Pla-ra Production Processes in the Central and North-Eastern Regions and Recommendation on Quality and Safety Criteria of Pla-ra. (Unpublished manuscript)

NOTIFICATION OF THE MINISTRY OF AGRICULTURE AND COOPERATIVES ON THE ESTABLISHMENT OF THAI AGRICULTURAL STANDARD: PLA-RA UNDER THE AGRICULTURAL STANDARDS ACT B.E. 2551 (2008)

Whereas the Agricultural Standards Committee deems it necessary to establish a Thai agricultural standard on Pla-ra as a voluntary standard in accordance with the Agricultural Standards Act B.E. 2551 (2008) to promote such agricultural commodity so as to meet its standard on quality and safety,

By virtue of Sections 5, 15 and 16 of the Agricultural Standards Act B.E. 2551 (2008) and the decision of the Agricultural Standards Committee at the First Session dated 8 January B.E. 2561 (2018), the Minister of Agriculture and Cooperatives hereby issues this Notification on the Establishment of Thai Agricultural Standard: Pla-ra (TAS 7023-2018) as a voluntary standard, details of which are attached herewith.

This Notification shall come into force after the date of publication in the Royal Gazette.

Notified on 9 February B.E. 2561 (2018)

(Mr. Luck Wajananawat)

Deputy Minister of Agriculture and Cooperatives

For Minister of Agriculture and Cooperatives

THAI AGRICULTURAL STANDARD

PLA-RA

1. SCOPE

1.1 This Thai agricultural standard applies to raw Pla-Ra made from freshwater or marine fish packed in container that is able to prevent contamination.

1.2 This standard does not cover processed Pla-Ra.

1.3 Raw Pla-Ra according to this standard should be cooked before being consumed.

2. PRODUCT DEFINITION

Pla-Ra (Fermented Fish or Salt-Fermented Fish) is a product obtained from fermentation of fish with salt and addition of rice bran and/or roasted rice bran and/or roasted rice. The fermented fish is whole or pieces, and soft in texture. Product has normal colour and specific flavour of its characteristics. Pla-Ra is packed in a container that is able to prevent contamination.

3. PROCESS DEFINITION

Pla-Ra is a product prepared by salting scaled and gutted fish (except for small fish) for a period of time, followed by adding rice bran and/or roasted rice bran and/or roasted rice at an appropriate ratio, and left for further fermentation for a suitable period of time until the characteristic flavour of Pla-Ra is attained prior to packaging. The fermentation process shall be done in a closed lid container such as a bucket, an earthen jar or a clean pond. Alternatively, all ingredients could be mixed together at the same time.

4. ESSENTIAL COMPOSITION AND QUALITY FACTORS

4.1 Raw Materials

4.1.1 Fish

Fish shall be non-poisonous, free of hazardous residues affecting human health, and of suitable quality for consumption. In general, either freshwater fish (such as gourami, mud carp, snakehead, catfish, tilapia, miscellaneous fish) or marine fish (such as croaker, lizard fish) are used.

4.1.2 Salt

Salt shall be clean, free from foreign matter.

4.1.3 Rice bran, roasted rice bran and roasted rice

Rice bran, roasted rice bran and roasted rice shall be clean, new without rancid odour, no evidence of insect (such as rice weevil, insect fragments) and foreign matters (such as sand, gravels).

4.2 Quality Factors

4.2.1 Physical characteristics

Physical characteristics of Pla-Ra shall comply with the requirements in Table 1

Table 1 Physical Characteristics of Pla-Ra

(Section 4.2.1)

Provision	Requirement
(1) General characteristics	- Composition shall be well mixed, not too dry, too moist or too mushy according to characteristics of Pla-Ra. - The fermented fish shall be soft in texture, with firm skin and not ripped.
(2) Colour	- Colour shall be normal according to characteristics of Pla-Ra. - Flesh shall be pale pink or in other colours (such as pale yellow, pale orange or light brown).
(3) Odour	- Odour shall be good according to the characteristics of Pla-Ra. - No off-odour such as fishy, stale, rancid, musty, sour
(4) Flavour	- Flovour shall be specific to characteristics of Pla-Ra - No off-flavour such as sour, putrid

4.2.2 Salt content

Salt content (as sodium chloride) in Pla-Ra shall not be less than 18 % by weight.

4.2.3 Parasites

Parasites shall comply with criteria in Table 2

Table 2 Criteria for parasites in Pla-Ra

(Section 4.2.3)

Parasite	Allowance (per 100 g sample)
(1) Larvae of *Gnathostoma spinigerum*	Not found
(2) Metacercaria of *Opisthorchis viverrini*	Not found

4.2.4 Defects

Defect allowance shall comply with criteria in Table 3

Table 3 Defect allowance of Pla-Ra

(Section 4.2.4)

Defect	Allowance
(1) Foreign materials such as soil, sand, gravels	Not found
(2) Insects (such as weevils, maggots, worms), insect debris, hair, dirt	Not found
(3) Fragments of other animals apart from fish	Not found
(4) Other fish not specified on the label	not more than 5 %

4.3 Definition of defectives

Pla-Ra in a package shall be considered defective when it does not exhibit any of the properties defined in Section 4.2.

5. Food Additives

5.1 Colour and preservatives are not allowed.

5.2 Food additives used in Pla-Ra, other than those mentioned in Section 5.1, shall be in compliance with the relevant laws and regulations and declared on the label as required in Section 9.1(d).

6. Contaminants

The maximum levels of contaminants in Pla-Ra shall comply with criteria in Table 4

Table 4 Maximum levels of contaminants in Pla-Ra

(Section 6)

Contaminant	Maximum level (mg/kg)
Lead	1.0
Inorganic arsenic*	2.0
Mercury	0.5 for marine fish 0.02 for freshwater fish

The maximum levels of contaminants in Pla-Ra, other than those specified in Table 4, shall be in compliance with the relevant laws and regulations.

Note * The determination is primarily done by analysing total arsenic. If the result does not exceed the maximum level, it is considered as compliant with the maximum level. If not, inorganic arsenic shall be further determined.

7. Hygiene

7.1 Pla-Ra shall be produced and handled in accordance with the Thai Agricultural Standard on Good Manufacturing Practices for Pla-Ra or TAS 9023 entitled Code of Practice: General Principles of Food Hygiene and relevant laws and regulations.

7.2 Microbiological criteria shall be as in Table 5

Table 5 Microbiological Criteria for Pla-Ra

(Section 7.2)

Microorganism	Sampling plan		Limit	
	n	**c**	**m**	**M**
1. *Staphylococcus aureus*	5	2	100 cfu/g	1,000 cfu/g
2. *Clostridium perfringens*	5	2	100 cfu/g	1,000 cfu/g
3. *Escherichia coli*	5	2	3 MPN/g or 3 in 1 g by MPN method	10 MPN/g or 10 in 1 g by MPN method
4. *Salmonella spp.*	5	0	Not found in 25 g sample	-
5. *Bacillus cereus*	5	2	100 cfu/g	1,000 cfu/g
6. Yeast and Mould	5	2	100 cfu/g	1,000 cfu/g

Notes

n *means the number of samples for inspection from each lot .*

c *means the maximum allowable number of marginally acceptable analytical units*

m *means acceptable microbiological concentration in an analytical unit.*

M *means the concentration of microorganisms allowable in the analytical unit and resulting in rejection of the lot.*

cfu / g *is colony forming unit per gram.*

MPN/g *is most probable number per gram.*

Where M is not specified, m and c shall be used as the criteria.

Where M is specified and the concentration of microorganisms found higher than m, the total number of detected of analytical unit shall not be higher than c. The concentration of microorganisms found shall not be higher than M.

In case a manufacturer has a Quality Assurance System such as the Code of Practice: General Principles of Food Hygiene, the Hazard Analysis and Critical Control Point (HACCP) system with satisfactory production history, the frequency of inspection may be reduced.

8. Packaging

8.1 Packaging shall be in compliance with the relevant laws and regulations.

8.2 Packaging material in direct contact with product shall be new, clean, dry, and resistant to corrosion. Package shall be able to close tightly and prevent contamination.

8.3 Net weight shall not be less than that specified on the label.

9. Labelling

9.1 Labelling of consumer packages

The labelling on each package shall be in compliance with relevant laws and regulations. At least, the following information shall appear on the label or package in a manner that is clear and readily legible, not false or deceptive, and indelible:

a) The name of the product shall be "Pla-Ra"

b) The fish used, such as gourami, mud carp, snakehead, catfish, tilapia, or miscellaneous fish

c) Approximate percentage of main ingredients by weight in descending order

d) Food additives (if any)

e) Net weight in gram or kilogram

f) Manufacturing date or expiration date or "best before…(dd/mm/yy)…"

g) Storage and consumption instruction e.g. to be cooked before consumption

h) Name and address of the manufacturer or re-packer and be able to display registered trademark

If a foreign language is used, the information provided shall reflect the requirements set forth in this Section.

9.2 Labelling of non-retail containers

The label shall be as of Section 9.1 and shall be displayed either on the container or in accompanying documents, except that of Section 9.1 (a), (b), (c), (e), (f) and (h) shall appear solely on the container.

10. Certification Mark

The use of certification mark shall be in compliance with the Ministerial Regulation of B.E. 2553 (2010) on Provisions Concerning Characteristics of Mark, Application and Display, and the related notifications of the National Bureau of Agricultural Commodity and Food Standards.

11. Methods of Analysis and Sampling

11.1 Analytical method

Analytical method shall be as in Table 6

Table 6 Analytical methods for Pla-Ra

(Section 11.1)

Provision	Analytical method[1/2/]	Principle
1. General characteristics: Appearance, colour, odour and flavour (Section 4.2.1)	Sensory Evaluation	Sensory Analysis
2. Salt content (Section 4.2.2)	AOAC 937.09	Volumetric Titrimetry
3. Larvae of *Gnathostoma spinigerum* and metacercaria of *Opisthorchis viverrini* (Section 4.2.3)	Compendium of Methods for the Microbiological Examination of Foods	Digestion Method
4. Foreign materials (Section 4.2.4 (1))	Visual Inspection	Visual Inspection
5. Insects (such as weevils, maggots, worms), insect debris, hair, dirt (Section 4.2.4 (2))	Visual Inspection	Visual Inspection
6. Fragments of other animals apart from fish (Section 4.2.4 (3))	Visual Inspection	Visual Inspection
7. Other fish not specified on the label (Section 4.2.4 (4))	Visual Inspection	Visual Inspection
8. *Staphylococcus aureus* (Section 7.2 (1))	Bacteriological Analytical Manual (BAM) Chapter 12	Direct Plating
9. *Clostridium perfringens* (Section 7.2 (2))	Bacteriological Analytical Manual (BAM) Chapter 16	Direct Plating
10. *Escherichia coli*(Section 7.2 (3))	Bacteriological Analytical Manual (BAM) Chapter 4	Most Probable Number
11. *Salmonella* spp. (Section 7.2 (4))	Bacteriological Analytical Manual (BAM) Chapter 5	Detection Method
12. *Bacillus cereus* (Section 7.2 (5))	Bacteriological Analytical Manual (BAM) Chapter 14	Direct Plating
13. Yeast and Mould (Section 7.2(6))	Bacteriological Analytical Manual (BAM) Chapter 18	Direct Plating
14. Net weight (Section 8.3)	Weighing	Gravimetry

[1/]Analytical methods shall refer to the latest edition

[2/]If analytical method in Table 6 cannot be carried out, the other methods shall be selected according to the appropriate performance characteristics and shall be in accordance with one of the following criteria:

(1) The method issued by the national competent authority or international standard organization or published manuals or other publications as internationally accepted.

(2) The method validated by laboratories through collaborative studies in accordance with internationally accepted criteria.

(3) In case the above mentioned methods in (1) or (2) are not available, the method validated by single laboratory validation in accordance with internationally accepted criteria is acceptable.

11.2 Lot Acceptance

Lot is the definite quantity of the product manufactured or produced under conditions which are presumed uniform.

A lot of Pla-Ra that is considered to meet the requirements of this standard shall be as follows:

11.2.1 The total number of defective sample units as classified according to Section 4.2 does not exceed the acceptance number of the sampling plan with the Acceptable Quality Level (AQL) 6.5 (Appendix A, Table A.1).

11.2.2 The average net weight of sample units shall not less than the net weight declared on the label.

11.2.3 Food additives, contaminants, hygiene, packaging and labeling are in compliance with Sections 5 to 9.

Appendix A

Attribute Sampling plan for Pla-Ra

Sampling plan for Pla-Ra shall be as in Table A.1

Table A.1 Sampling plan for Pla-Ra with Acceptable **Quality Level (AQL) 6.5 (Special level, S-3)**

(Section 4.2)

Lot size (N)	Level (S-3)	Sample size (n)	Acceptance number (c)
≤ 15	A	2	0
16 – 50	B	3	0
51 – 150	C	5	1
151 – 500	D	8	1
501 – 3,200	E	13	2
3,201 – 35,000	F	20	3
35,001 – 500,000	G	32	5
≥ 500,001	H	50	7

Notes

Lot size (N) is the number of individual package in one lot.

Sample size (n) is the minimum number of individual package to be examined in each lot.

Acceptance number (c) is the maximum number of defective products allowable in a sampling lot in order for the lot to be accepted.

For Pla-Ra in a 20 kg package or more, the sample size shall be drawn not less than two kg from each sample as shown in Table A.1.

For the microbiological examination as described in Section 7.2, five (5) sample units shall be collected in addition to the samples collected for Section 11.2.1. In case the product is packed in a package of less than 250 g, ten (10) sample units shall be collected. However, the total weight collected shall be not less than 1.5 kg.